Measures of Central Tendency

Learning Goal(s)

Minds on Math

Consider the following data set and the highlighted value below.

10	9	14	14	13

12

The highlighted value is a *typical* value for describing this set of data.

Pull

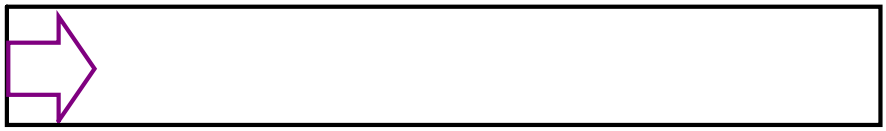
Pull

Minds on Math...continued

Consider the same set of data and the highlighted value below.

10	9	14	14	13

13



This highlighted value is also another *typical* value for describing a set of data.

Pull

Pull

Minds on Math...last but not least

a) What is the mode/are the modes for this data set?

10	9	14	14	13

b) What is the range for this data set?

Pull

Take Action-Problem 1

The following numbers (in any order) represent the mean, median, mode, and range for a set of data:

13, 14, 15, 8

What could this data set be?

Take Action-Problem 2

a) The score on Day 8 is typical of the rest of the scores.

-What can you expect on Day 8?

Day	1	2	3	4	5	6	7	8
Score	49	44	37	45	45	42	48	?

b) The score on Day 8 is *atypical* of the rest of the scores.

-What could this score be?

-How much of an impact does it have on the mean?

Some Key Ideas

-The summary statistics--**mean, median and mode**--are referred to as **measures of central tendency** as they typically describe where the middle of the data lie.

-The **range** is a measure of spread that reports the difference between the maximum and minimum values of a data set.

-Together, you can use the measures of central tendency and the range to compare different data sets that have some comparable statistics.

-For example, if two students, in two different classes have relatively similar grades, the classes can be compared to see which grade is 'better'.

-For some data sets, it is better to report the **median** as the measure that best represents the data. The median is resistant to large fluctuations in the values of a data set; the mean is not.

-If a data set contains an **outlier** (or outliers), they can have a significant impact on the value of the mean, and therefore, the mean may not best represent the data.

-An outlier is a data value that is distinctly different than all other values in a data set.

Independent Practice Name: _____

1) The following marks were recorded for a History exam:

37 68 72 73 73 75 77 81 82 82 83 84 97

Which measure of central tendency best represents the exam marks? Justify your choice.

Independent Practice

2) Jeannine works as a real estate agent. Below is a price comparison list she has prepared for a client interested in selling their home.

	House 1	House 2	House 3
List Price ($)	324 500	379 000	299 900
Sale Price ($)	315 000	370 000	295 500

a) Determine the mean and median list and sale prices and the price ranges (Note: range = max -min). Use the table provided to organize your answers.

b) Which measure would you use for estimating what the client's house might sell for? Explain your choice.

	Mean	Median	Range (Max - Min)
List Price ($)			
Sale Price ($)			